WHAT IS CLAIMED IS:

1. A photoresist comprising:

a lactone bonded to a polymer backbone, the lactone being reactable to an acid to form an open ring structure.

2. The photoresist of Claim 1, wherein the lactone comprises a five-sided ring of carbon and oxygen.

3. The photoresist of Claim 1, wherein the lactone comprises a six-sided ring of carbon and oxygen.

4. The photoresist of Claim 1, further comprising a first group attached to the lactone.

5. The photoresist of Claim 4, wherein the first group comprises an electron-withdrawing group.

6. The photoresist of Claim 4, wherein the first group comprises an alkyl group.

7. The photoresist of Claim 4, wherein the first group comprises a cage group.

8. The photoresist of Claim 4, wherein the first group comprises a phenyl group.

9. The photoresist of Claim 4, wherein the first group comprises carbon, oxygen and hydrogen.

10. The photoresist of Claim 4, wherein the first group comprises nitrogen dioxide.

11. The photoresist of Claim 4, wherein the first group comprises hydroxide.

12. The photoresist of Claim 4, wherein the first group comprises carbon and fluorine (CF_3).

13. The photoresist of Claim 4, further comprising a second group attached to the lactone, the first and second groups comprising the same molecules.

14. The photoresist of Claim 4, further comprising a second group attached to the lactone, the first and second groups comprising different molecules.

15. The photoresist of Claim 1, further comprising a photoacid generator molecule to form acid upon radiation exposure.

16. The photoresist of Claim 1, wherein the lactone is reactable with an acid to change a solubility of the photoresist.

17. The photoresist of Claim 1, wherein the lactone is reactable with an acid to form an open ring structure bound to the polymer backbone with no outgassed molecules in a vacuum environment.

18. The photoresist of Claim 17, wherein the open ring structure increases solubility of the photoresist in an aqueous base developer.

19. The photoresist of Claim 1, further comprising a side chain styrene group bonded to the polymer backbone.

20. The photoresist of Claim 19, wherein the side chain styrene group is attached to a group comprising at least one of hydroxide (OH), an alkyl group and a cage group.

21. A method comprising:

forming a photoresist with a polymer backbone and a lactone, the lactone being bonded to the polymer backbone.

22. The method of Claim 21, wherein forming the photoresist comprises forming a chemically amplified photoresist.

23. The method of Claim 21, wherein forming the photoresist comprises forming a first group attached to the lactone.

24. The method of Claim 21, wherein forming the photoresist comprises forming first and second groups attached to the lactone.

25. A method comprising:

radiating an area of a chemically amplified photoresist in a vacuum environment;

generating an acid within the photoresist;

opening a protecting ring in the photoresist with the generated acid without outgassing molecules from the protecting ring.

26. The method of Claim 25, wherein said radiating uses extreme ultraviolet (EUV) radiation.